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# POWERLINE

The Voice of the On-Site Power Generating Industry

# SEISMIC


## Certification & the Consulting Engineer

The Four Critical  
Factors at Issue

EGSA 2011  
Market "Pulse"  
Analysis

Plus:  
Tech Certification Update  
Member Profile: Enercon

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## Columns

From the Top . . . . .	7
Marketing EGSA.	
Education . . . . .	8
Certification Update.	
Codes & Standards . . . . .	10
NEC Article 708, Bio Diesel Issues and Low-Voltage DC.	

## Features

Seismic Certification & The Consulting Engineer . . . . .	15
4 Critical Factors at Issue: Minimizing Liability, Good Specs', QA & Certified Equipment.	
EGSA 2011 Market "Pulse" Analysis . . . . .	21
EGSA Market Trends Committee Bi-Annual Market Survey.	
Enercon Engineering Member Profile . . . . .	25
Another in our series of EGSA member company profiles.	



## Departments

Events Calendar . . . . .	5
Association and industry events.	
Index of Advertisers . . . . .	6
Who's who in this issue of <i>Powerline</i> .	
Association News . . . . .	29
Updates from EGSA.	
EGSA New Members . . . . .	30
Who has joined EGSA in the past few months?	
EGSA Membership Application . . . . .	31
It pays to be a member of EGSA!	
Job Bank . . . . .	35
Looking for a new job?	
Industry News. . . . .	37
The latest reports.	

*On the cover: Seismic Certification  
& The Consulting Engineer; page 15*

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## Industry Trade Shows

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### POWER-GEN India & Central Asia 2011

May 5-7, 2011; New Delhi, India

The region's leading exhibition and conference for the power generation, transmission and distribution and water industries. To exhibit, contact Kelvin Marlow at [exhibitpgica@pennwell.com](mailto:exhibitpgica@pennwell.com)

### Power-Gen Asia 2011

September 27-29, 2011, Kuala Lumpur, Malaysia

The region's premier conference and exhibition for the power generation, renewable energy and transmission and distribution industries. To exhibit, contact Bridgett Morgan at [bridgett@pennwell.com](mailto:bridgett@pennwell.com)

### POWER-GEN Middle East 2011

October 24-26, 2011; Doha, Qatar

The region's premier conference and exhibition for the power generation, transmission and distribution and water industries. To exhibit, contact Bridgett Morgan at [bridgett@pennwell.com](mailto:bridgett@pennwell.com)

### POWER-GEN International 2011

December 13-15, 2011; Las Vegas, Nevada

The world's largest show for power generation, featuring the EGSA On-Site Power Pavilion. For exhibit information, contact EGSA at (561) 750-5575, ext 205 or e-mail Jalane Kellough at [J.Kellough@EGSA.org](mailto:J.Kellough@EGSA.org)

## Conferences

### PowerTest 2011

February 21-24, 2011; Arlington, VA

The Electrical Maintenance and Safety Conference is designed to inform and educate those involved with or responsible for electrical power systems. For more information, visit [www.powertest.org](http://www.powertest.org)

### EGSA 2011 Fall Technical & Marketing Conference

September 18-20, 2011; Baltimore, MD

Speakers will cover business and technical aspects of On-Site Power Generation and current industry trends. Information and registration will be available online at [www.EGSA.org](http://www.EGSA.org) or call (561) 750-5575.

### EGSA 2011 On-Site Power Generation Schools

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Las Vegas, NV ..... December 13-15\*

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## ADVERTISERS INDEX

Altronic, LLC (GTI Bi-Fuel) . . . . .	9
Anna, Inc. . . . .	13
ASCO Power Technologies . . . . .	40
Avtron Mfg. . . . .	37
Baldor Electric Company. . . . .	20
Basler Electric . . . . .	14
Buildings VIP Platform . . . . .	19
ComRent International LLC . . . . .	4
Davidson Sales . . . . .	26, 37
DEIF . . . . .	26
Diesel Gas & Turbine Publications . . . . .	33
Enercon Engineering, Inc. . . . .	2
Evans Cooling Systems . . . . .	37
Flight Systems . . . . .	18
General Industries. . . . .	16
Generator Solutions. . . . .	38
GT Exhaust . . . . .	13, 27
Hennig . . . . .	33
Hotstart . . . . .	28
JRS Custom Fabrication, Inc. . . . .	38
Lectrus . . . . .	34
Mid-America Engine . . . . .	39
Miratech . . . . .	17
NFMT . . . . .	29
Phoenix Products . . . . .	5
Power Search. . . . .	36
Powertron . . . . .	12
Robinson Custom Enclosures . . . . .	12
Ruselectric, Inc. . . . .	11
Showmen Supplies Inc. . . . .	12
United Alloy, Inc. . . . .	24
Universal Acoustic & Emission Technology . . . . .	30
Wabash Power Equipment Co. . . . .	30

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*Powerline* is published six times per year on a bi-monthly basis. Articles and information submitted for publication should be forwarded to the attention of the Editor at the address above 30 days prior to publication. Technical articles and articles of general interest to the electrical generation industry are actively sought and encouraged. *Powerline* reserves the right to limit information appearing in its pages to that which, in its sole discretion, will reflect positively on EGSA and the industry which it serves.

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John Kelly, Jr.  
2011 EGSA President  
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## Marketing EGSA

In my last column, I wrote about how I meet many people in my daily business dealings that have never heard of our association. Most of these people are outside of our immediate circle of manufacturers, distributors, dealers, reps, and service companies, and EGSA's relative anonymity handicaps our efforts to improve the industry.

Our Technician Certification Program in particular needs EGSA's name and logo to be recognizable to companies and personnel that buy, use, maintain, and rely on their on-site power generation equipment. I believe that only when inspectors, electrical engineers, and others start asking for firms that utilize EGSA-certified technicians will the program have a chance to make a significant impact on our industry.

The solution to getting our program accepted is to make EGSA's name as recognizable and respected with our customers and regulators as NFPA or IEEE is to theirs. I realize that this is a bold statement and a challenging goal, but it is absolutely essential that we embrace it.

I'd like to tell you about a few of the things we are doing to accomplish that.

Most importantly, the leadership of the organization has put a high priority on marketing EGSA to non-members. Our recently completed Strategic Long Range Plan has increased visibility as one of its main goals, and we have begun to invest significant resources in marketing.

You may have read that we have established a full-time staff position dedicated to marketing. We have always had a great staff, but the Board felt that it was necessary to have someone whose entire work day is dedicated to coming up with new ideas for getting the word out about EGSA and then implementing them.

While we have had some turnover at this position lately, those of you who attended our Fall Technical & Marketing Conference in California saw a small part of what has come from the Mar-

keting Manager position. Before that Conference, we may have had the random consumer of on-site power attend, but we made a concerted effort last Fall to bring them in by providing educational opportunities designed especially for them – and sending special marketing materials to building owners, managers, and support personnel in the states surrounding the Conference location. We were very pleased at the number of end-users who took us up on our offer, and we are repeating those efforts for this Spring Convention.

That's just one small initiative, and more are in the works that have the potential to reach a much larger audience.

For example, along with Diesel & Gas Turbine Publications, we are undertaking an overhaul of the annual *Buying Guide of On-Site Power Generation Systems and Services*. We hope to make it significantly more useful as a way to help connect consumers of on-site power with member providers, and we are looking into ways to get it into the hands of people peripheral to the industry who have never before received it, such as building managers and owners, fire and safety inspectors, engineers, and more.

I am personally very excited about a new partnership we are forging with Building Operating Management's NFMT (National Facility Management Technology) Show. We are working on a comprehensive co-marketing deal with NFMT that will include advertising trades, direct mail to each other's lists of members/attendees, and an on-site power pavilion like the one we currently sponsor in the Power-Gen International trade show. This partnership will help us spread the word about EGSA to a whole new audience in a comprehensive way.

We have a lot of work to do, and we need even more great ideas, but I have every reason to believe that we are now on our way to significantly wider recognition and esteem. ■



George Rowley  
EGSA Director  
of Education  
G.Rowley@EGSA.org

## Certification Update

The Technician Certification Program has reached a milestone by celebrating its 6th anniversary!

### Technician Certification: Where We've Been – Where We're Going

There is a great deal going on with EGSA education programs “behind the scenes” that I expect to come to fruition soon. We are working on many levels to create new educational opportunities for the industry as well as to improve our existing programs.

Our most significant educational initiative – the one that has the greatest potential to impact our industry in a very positive way – is our Technician Certification Program. With all that has happened with this program over the last few years, I find that it is important every once in a while to review where we have been, where we are, and where we are going.

### THE TECHNICIAN CERTIFICATION PROGRAM

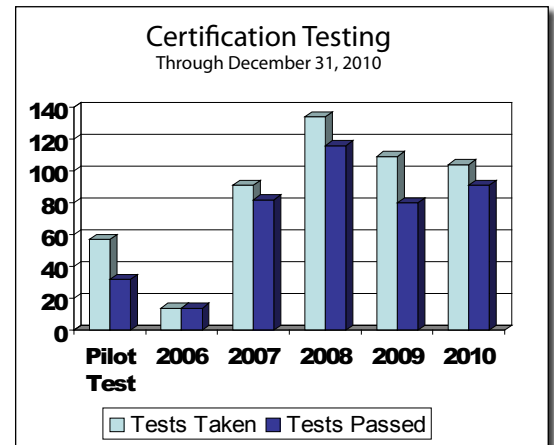
**The value of certification** – Our certification program and test established standards of performance and knowledge for generator service technicians. By passing the test, each tech has demonstrated proficiency and a level of knowledge and skill that proves that he or she knows what they are doing. They are decisively able to set themselves apart from “back yard” mechanics. And everyone, from manufacturers to end users, can have confidence that a certified tech has the skill and knowledge to install, maintain, service and repair expensive and complicated power generation equipment.

#### Where we have been

As was mentioned in the last issue of *Powerline*, our technician certification program began in December 2005 when 57 hand-picked technicians from across the United States volunteered to take the pilot test. Those techs were trailblazers of sorts as they had no way to formally prepare to take the test. The purpose of the pilot test was to enable us to validate it and, as a result of their performance, we were able to develop the Study Guide. The Study Guide is very helpful to those who are preparing to take the tests and will really help them have success.

**Pilot Test** – We wanted the test to be applicable to techs that had 5 or more years experience and the results of the pilot test indicate that

it did what it was supposed to do – identify those technicians who have working knowledge of the electrical and mechanical components of a gen-set, and that are proficient installing, servicing, and maintaining one. Here are the results of the pilot test: **56%** of those who took the pilot test passed it; **84%** of the techs with 5 or more years experience passed; **65%** with 2 to 5 years experience passed; but only **17%** of the techs with one year or less passed it. Clearly, experience matters.



#### Where we are

Our first official and fully validated test was taken July 27, 2006, but since only 15 techs passed the test in 2006, we have a tendency to look at the program as being fully functional beginning in January of 2007 to the present. And as mentioned last month, techs that passed the pilot test began taking the test for recertification in November.

**Rate of Testing/Passing/Number of Certified Techs** – As can be seen from the chart above, testing peaked in 2008 (134 tested; 116 passed), but has been fairly steady the last two years with an average of about 106 taking the test and about 85 passing it in 2009 and 2010. As of the end of 2010, 509 techs had taken the test since program launch, and 416 (81.7%) have passed it.

**It has become an International Test** – We are very proud that technicians in other countries have embraced our test, and that they and their employers can see the value of certification. Currently there are 19 certified technicians in Ontario, Canada, eight in Trinidad, and one each in British Columbia, Canada; France; Guam; and Manitoba, Canada.

*Continued on page 13*

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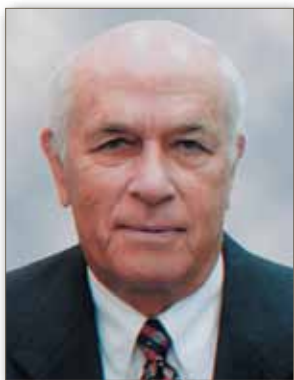
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Herb Whittall  
EGSA Technical Advisor  
HWhittall@comcast.net

## NEC Article 708, Bio-Diesel Issues, and Low-Voltage DC

I read many industry publications looking for information to pass along to *Powerline* readers, and I recently found a very informative piece in the January/February issue of *IEEE Industry Applications Magazine* concerning The National Electric Code Article 708 – *Risk Analysis for Critical Operations Power Systems*.

Written in the past cycle by Panel 20, Article 708 has now been turned over to Panel 13 and others. It was created at the request of the Homeland Security Agency as a set of criteria that the government can use to designate an installation as a Critical Operations Power System (COPS) or a Designated Critical Operations Area (DCOA), which would be enforced by the Authorities Having Jurisdiction (AHJs). Essentially COPS and DCOAs are critical to the continued operation of essential services in case of an emergency or attack.

The main meat of the Article is in section 708.4 Risk Assessment; 708.5 Physical Security; 708.6 Testing and Maintenance and 708.8 Commissioning. I urge you to pick up a copy of the IEEE magazine or visit [www.ieeeexplore.ieee.org](http://www.ieeeexplore.ieee.org) to read about Article 708 in detail.

### NFPA

A meeting of the committee to consider proposals for the 2013 editions of NFPA 110 *Standard for Emergency and Standby Power Systems* and NFPA 111 *Standard for Stored Electrical Energy Emergency and Standby Power Systems* was held in Nashville, Tennessee, January 10 – 12. This meeting covered all the proposals submitted to NFPA requesting changes to the previous editions. There were 49 proposals and 14 committee proposals for NFPA 110 and 8 proposals and one committee proposal for NFPA 111.

The meeting covered fuels and fuel quality, specifically bio-diesel, which is not well addressed in NFPA 110. The government is pushing B-5 blends (5% bio and 95% diesel) to try and lower the amount of foreign oil we import. B-10 and higher percentage blends may be recommended in the future.

It seems that bio-diesel has a much shorter shelf-life than plain diesel fuel, beginning to deteriorate after 6 months depending on storage conditions, and adding bio-diesel to a tank that contains straight diesel will make the combined fuel start to deteriorate sooner.

Unfortunately, there are no current laws or standards that make a fuel supplier tell customers whether or not they are receiving bio-diesel when they get a shipment of fuel. Even the fuel supplier may not know whether the fuel he is delivering is bio-diesel.

To help fix this problem, wording will be added to the 2013 edition in 5.1.1 (1) and (2) referring to the appropriate ASTM standard and the engine manufacturer's recommendation.

In that same chapter, in 2005, the wording was changed in what is now 5.1.2 making 96 hours of fuel mandatory for level 1 EPSS Class X installations. This was an inadvertent error. At the recent meeting, 5.1.2 was deleted from the required part of NFPA 110 and added with modifications to the Annex as part of A.4.2. It will reflect pre-2005 wording which required the 96 hours of fuel only if the facility was to operate as level 1 for that length of time.

All of these revisions passed with only 5 articles getting one negative vote, so they will be published in the ROP available on-line on June 24. Comments submitted concerning these proposals will be accepted until August 30. The committee will reconvene sometime in late September or early October to review comments, so none of the revisions are cast in stone just yet.

### Low Voltage DC

The National Electrical Manufacturers Association, Underwriters Laboratories and NFPA will be sponsoring a workshop for Low Voltage DC at the Hilton Crystal City, Arlington, Virginia on April 8, 2011. The workshop is titled "How and Where Does LVDC Fit into the Sustainability

*Continued on page 12*

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## CODES & STANDARDS

Continued from page 10


Puzzle?" It has to do with generation, distribution and utilization of low-voltage DC energy. One session will cover the codes and standards challenge with Mark Early, NFPA Assistant VP, and another session, presented by Underwriters Laboratories, concerns taking a system approach to LVDC. You can find more information on it at: <http://psiaei.com/LVDC%20Info/LVDC/files/LVDC%20Workshop-flyer-110204.pdf>.

### UL Standards

I am a member of a "Small Engine Task Group" organized by Underwriters Laboratories to look at UL Standards noting inconsistencies, unrealistic or inappropriate requirements or factors not addressed in current standards. The task group is to prepare a recommendation to UL on how to amend any of these standards that may need it. The standards we are looking at are UL 558, UL 1248, UL 1602, UL 1776, UL 2200 and UL 2201. If you have any problems or comments concerning any of these UL standards, please contact Herb Whittall ASAP at [hwhittall@comcast.net](mailto:hwhittall@comcast.net). ■

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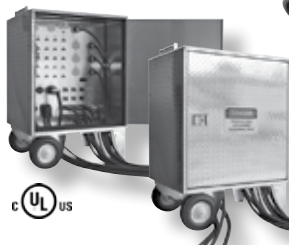
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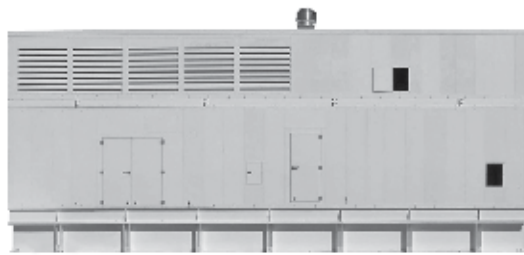
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Continued from page 8

## Where we are going

We think every qualified tech in the United States should strive for certification. But in contrast to the 31 certified techs in other countries, there are no certified techs in 12 US states!

In the EGSA strategic plan, the Board of Directors established a goal of increasing the number of certified techs 50% per year. The Certification Committee and the Board feel that a key factor to success is to increase end-user awareness of the program and help them understand the importance and value of certification.

Therefore, for some time we have been writing about our intent to develop a more aggressive marketing program and to focus our marketing efforts on end-users. Last year the Board of Directors authorized hiring a full-time Marketing Manager and much work and effort has been expended on developing a marketing plan that will promote EGSA in general and the certification program specifically.

**NFMT - Our First Step to Target End-Users** – EGSA and the Trade Press Media Group recently agreed to become partners in an effort to provide the latest information on the advances and effectiveness of onsite power at NFMT. NFMT is Building Operation Management's National Facilities Management and Technology Expo. Attendees and exhibitors at the NFMT are building owners and managers and vendors that provide facility management equipment and services.

At each annual NFMT event, EGSA will host a "Power Source Pavilion" that will add significant value to buyers and sellers of on-site power solutions and equipment. As part of the partner-

ship, a new educational track will be developed to provide facility professionals with key on-site power strategies.

Although EGSA will not debut the Power Source Pavilion until March 2012, EGSA representatives will attend this year's NFMT in March to begin arranging for member participation in the Pavilion next year and will begin educating this year's attendees and exhibitors about on-site power and EGSA. It should come as no great surprise that one of our main agendas for NFMT is to educate end-users about the importance and value of technician certification. ■

*If you have questions or comments about EGSA's education programs please contact George Rowley at [g.rowley@egsa.org](mailto:g.rowley@egsa.org) or by phone at 561-237-5557.*

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# Seismic Certification and the Consulting Engineer

## 4 Critical Factors at Issue: Minimizing Liability, Good Specs', QA and Certified Equipment

By: Bhavesh S. Patel, Director of Marketing, ASCO Power Technologies

Building code standards for seismic certification require that critical mechanical, electrical and plumbing equipment must endure higher ground acceleration levels, or risk being red tagged during inspection, or worse. They also are being more broadly applied than before.

International Building Code (IBC) editions since 2000<sup>1</sup> demand that critical equipment, such as on-site power systems that power life safety and critical branches, may need to withstand higher ground acceleration levels<sup>2</sup> throughout the country, including those generated by the San Andreas Fault in California.

An important element in designing power systems to resist seismic events is seismic demand spectrum. It stands for short period spectral acceleration and is designated in the code as SDS. It represents the base acceleration forces for a specific site, which can range from 0 to 2.46. Equipment must be certified to the SDS values for both the site at which it will be installed and the location in the building where it will operate. For example, power systems installed on rooftops in California must be certified for rooftop applications at the SDS value for the project. In California's case, the value is 1.93.

Bottom line, engine-generators and their support equipment, switchgear and power transfer switches must be able to operate after a severe seismic event.

The IBC Code requirements for special seismic certification of electrical equipment can be game changers for consulting engineers. The requirements raise the bar to the level of "proof" that design, construction and equipment specification, installation and operation will enable essential facilities to continue their intended function after severe seismic events. "Proof" is actual shake table testing of a system and its components, rather than solely an engineering analysis.

Special inspectors, not building code officials, evaluate facilities for compliance. If a facility does not comply, the inspector has a legal right to withdraw the certificate of occupancy even though the building may be occupied. The insurance company could declare the building uninsurable and put the consulting engineer in the cross hairs.

**Consulting engineers need to address four critical issues to ensure their projects meet code and they protect themselves.**

### They need to:

1. Minimize their exposure to risk and liability by familiarizing themselves with evolving seismic code standards,
2. Develop well-written specifications that account for ground acceleration and other seismic data for a site,
3. Work with contractors on a quality assurance program, and
4. Specify equipment properly certified for the specific building location.

### Real-Life Risk

On-site power equipment that is essential to building operation and that is specified and installed in critical facilities but does not comply with IBC standards in jurisdictions that have adopted the code risk being red tagged. Already, engine-generator equipment installed in a new construction hospital in St. Louis, MO was red tagged for not being seismically qualified.

St. Louis is near the New Madrid fault area, which has generated the most severe ground acceleration during a seismic event in the U.S. Ground acceleration during a seismic event is a major determinant of destruction. The seismic standards of IBC refer to higher ground acceleration levels specified in ASCE 7-05, based on the New Madrid events of 1811 and 1812.

What that meant to the hospital project is that the engine-generator manufacturer had to send a retrofit kit to the site that was field installed to bring the equipment into compliance. It could have been worse—for the hospital as well as others involved in the project.

Non-compliant equipment could boost a building owner's insurance premium. If the equipment fails to operate after a seismic event, it could result in physical damage and perhaps loss of life. Insurance claims could be, and have been, denied.

Even if equipment operates properly after a seismic event, liability still may arise for

1. IBC 2000 refers to ASCE 7-98, 2003 refers to ASCE 7-02, and 2006 and 2009 refers to ASCE 7-05 as the performance benchmarks for seismic criteria.

2. The U.S. Geological Survey assigns ground acceleration levels.

the consulting engineer. One example could occur if the emergency power design didn't include all of a hospital's chillers. After normal source power failed after a seismic event, ambient temperature and relative humidity might rise to levels that could compromise patients on life support or the ability of operating rooms to function comfortably. The consulting engineer, hospital owner and others could be liable. Richard Berger, chairman of The VMC Group, a company specializing in shock, vibration, seismic and noise control and the largest certifying agency for the power generation market said, "It could be a legal issue to be tried in court."

An air handling unit at an office building in Houston, for example, did not withstand wind speeds that were included in the building's design criteria. After Hurricane Ike hit the area in 2008, the unit dislodged from the building allowing water to enter ductwork and cause extensive interior damage to the building. The insurance company denied the building owner's claim because the unit had not complied with building codes.

#### It's Not Just Building Owners at Risk

Besides building owners, risk and liability also lie with contractors, consulting engineers, project engineers and critical equipment manufacturers. The building owner and other plaintiffs could sue them for improperly designed and installed systems. As of May 2010, for example, Berger of The VMC Group said 38 lawsuits have been filed as a result of the code.

Engineering professionals can minimize their exposure by ensuring critical equipment is specified and installed according to current code standards.

It seems simple enough, but it isn't always. Too many professionals may believe they are protected by the master specification. But if it isn't written properly, it can be of little comfort when litigation arises. Bottom line, consulting engineers and other project team members are joined at the hip regardless of their role. The code's Consequential Damage clause makes clear that the work of one also is the responsibility of others.

Consulting engineers and other team members also may be unaware or confused about changes in the building code, especially for seismic events. One reason is that the building code is the handbook for structural engineers, not electrical engineers. The seismic certification requirements for electrical equipment that it contains are not included in electrical handbooks.

Another reason the IBC revises its seismic provisions every three years is to include new information and capitalize on new technologies. This is why it's important for state and local governments to be sure the latest seismic standards are part of their codes.

All states have adopted one version of the IBC code and 44 states have adopted IBC 2006. The state of Ohio, for instance, has adopted seismic code standards since it has been, and can be, affected by New Madrid area events. The events of 1811 and 1812 caused structural damage across Ohio.

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Other states have adopted seismic code standards for the first time. It will take time for authorities having jurisdiction and engineering professionals in those states to become fluent with them.

Still, many earthquake-prone communities in the U.S. do not have up-to-date building codes with seismic provisions. In general, structures that comply with seismic standards should withstand minor seismic events undamaged, moderate events without significant structural damage, and severe events without collapse. This is especially critical for installations in states, such as Washington, Nevada, Idaho and Colorado, which can experience frequent and sometimes intense seismic activity.

Interestingly, codes only recently began to address mitigation of content hazards in buildings, which can cause casualties and expensive damage.

#### Note the SE's Notes

Another reason for confusion about seismic qualification is that the criteria are not included in the mechanical, electrical and plumbing sections of the code. They're in the structural engineering sections. One way to ensure properly written specifications is to review the structural engineer's notes on a project and address them in the specifications. The specification writer will find data on building type and its seismic design category, ground acceleration, soil conditions and other seismic design forces that the building and its critical equipment must withstand.

Specifiers also should refer to detail in construction documents since the registered design professional must include in them pertinent seismic qualification standards for critical systems.

Finally, the project team could ask an outside expert in seismic building code standards to review on a project's ability to qualify for seismic certification. A structural engineer licensed in California, for example, must review and approve all test reports or analyses for buildings constructed in that state.

With practice and the proper information at hand, specification writers will be able to write clear specifications that help ensure that only code compliant critical systems qualify for a project. Specifications, however, should be part of overall project management planning that helps immunize engineering professionals from exposure. Engineers with equipment manufacturers can help with the proper specification text for this purpose.

Other actions should include working with contractors on a quality assurance program, and specifying only properly certified equipment in accordance with the manufacturer's recommendations for seismic use and to confirm equipment is installed properly.

Manufacturers for their part also should review the structural engineer's notes for a project to make certain their equipment is code compliant. ASCO Power Technologies switchgear, for example, is certified to withstand the highest ground accelerations in the country, even those experienced in the New Madrid fault zone. The equipment also is certified for rooftop installation, which requires three times the design force as ground level installations. The company indicates that its power control systems comply with the seismic standards of the new building code.

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In fact, independent tests show that ASCO transfer switches operate even during severe seismic events, even though the IBC codes do not require such operation.

For critical facilities, such as hospitals, that could be literally life saving. Because in real life, these switching mechanisms could undoubtedly be called to operate during a typical 30-second quake. Tests prove the transfer mechanisms do not jam or otherwise fail to complete the transfer, even during the vibrating conditions of a seismic event. This is important since standards for hospital emergency power systems require the systems be operational within 10 seconds of a power outage.

### Shake, Rattle and Roll

To qualify for seismic certification, building codes require that flexible critical systems and components, such as transfer switches, switchgear, fire pump controllers and other on-site power systems, be subjected to simulated seismic events on a shake table, rather than just an engineering analysis. Code compliance no longer can be achieved with engineering analysis alone.

When qualifying on a shake table, testing must adhere strictly to AC156 criteria for non-structural systems and components. Equipment that has qualified via the Telcordia GR 63 standard may need to be de-rated. The consequences of not complying with the standards may mean equipment may be red tagged, or worse...litigation to determine liability and judgments.

The VMC Group, for example, certified ASCO equipment on a tri-axial seismic simulator that punished the equipment with thousands of pounds of force. It was fully cabled with the rated

ampacity cable from the top, which raised the center of gravity and added weight. Testing with fully rated cables proves the cables did not loosen from their lugs. The systems also were tested live during the exercise and performed as designed.

During such tests, mounting bolts take the brunt of the force. They are a critical factor in withstanding a seismic event, considering enclosures may move as many as three inches in all three axes. The top of the enclosure may move up to four inches. Test results show the transfer switch's ruggedness ensures mounting bolts remain seated, doors remain shut and, the robust design of mechanically locked critical components, such as contacts, prevents jamming. Bottom line, the system remains operational throughout and after the test.

Bolts and braces are also important for another reason—to protect against consequential damage and the potential liability that could result. This type of damage occurs when non-essential equipment breaks loose during a seismic event and causes essential equipment to fail. The notion of consequential damage makes the work of one designer responsible for another.



*This stop-action image shows a 4000 amp bypass-isolation automatic transfer switch withstanding thousands of pounds of force in three directions. The enclosure can move as much as three or four inches.*

*Photo: Courtesy of ASCO Power Technologies*

### It's in the Codes!

Chapter 17, section 1708.5 describes in more detail seismic qualification of mechanical and electrical equipment, such as emergency power systems. Such systems encompass open gensets, enclosures, sub-base fuel tanks, remote radiators, automatic transfer switches and switchgear, batteries and battery racks, battery chargers and day tanks.

It falls to the consulting engineer to determine whether equipment is essential to enable a facility to perform its intended function during a seismic event and to advise appropriate manufacturers through the specification and construction documents. If the equipment is a life-safety component, contains hazardous material or is required to function in order to keep an essential facility online, it's assigned a seismic component importance factor (Ip) of 1.5. In assigning an Ip of 1.5, the consulting engineer must use Section 13.1.3 of ASCE 7-05 as the guide. As noted earlier, Chapter 13 of ASCE 7-05 is the performance benchmark added in the IBC 2006 and 2009 building codes.

The Importance factor also applies to components in or attached to an Occupancy Category IV structure (IBC 2003/2006) or Category III structure (IBC 2000) that are essential to the continued operation of designated facilities.

Occupancy Category is the new term for Seismic Use Group that was used in previous versions of the code. Category IV is essential facilities, such as hospitals, airports and emergency services. Category III facilities are those that represent a substantial hazard to human life if they should fail. Examples are schools,

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day care facilities, power plants and facilities with occupancy capacities exceeding 5,000. Categories II and I facilities and their equipment need to comply with seismic standards when the  $I_p$  is 1.5 due to life safety or hazardous material.

There are instances when an existing building could change categories. Berger of The VMC Group recounted an experience by Goldman-Sachs with a 35-story building it owns in Jersey City, NJ. Because the brokerage house leased space to a 911 call response center, the category for the entire building changed to Occupancy Category IV. That made it an essential facility that was considered new construction and subject to Category IV standards.

In another instance, if a school's gymnasium is designated as an emergency shelter, the gym can't be considered an "island." The entire school is categorized as Occupancy Category IV.

Equipment that needs to meet standards, however, must carry a certificate of compliance (C of C) that is submitted to the specifying engineer during submittal review and also submitted to the building official for approval.

In addition, a label, mark or other identification on the system or component must be affixed to determine compliance. This identification is the proof to the inspector that the equipment that arrived on site is the same as what was submitted and approved during the submittal process. The C of C and the equipment label must contain the name of the certifying agency, the name of the manufacturer, the model designation of the equipment and the performance criteria of the equipment (i.e. the seismic capacity of the equipment).

For his part, the building owner or his professional engineering representative must submit a statement of inspections identifying the building's seismic-force-resisting systems, seismic systems, and architectural and electrical components requiring special inspections.

Besides the building's occupancy category, the type of soil at the project site also helps establish whether seismic standards apply to a given facility. Soils affect an event's peak ground acceleration (PGA), or degree of ground motion. Soft soils over bedrock amplify motion. Another liquefies, causing foundation failure. There are six soil types: hard rock, rock, very dense soil and soft rock, stiff soil, soft soil, and extremely vulnerable soil. Soil profiles are important because they help determine a site's  $S_{DS}$  value. The  $S_{DS}$  value and Occupancy Category, in turn, help define the Seismic Category.

The question often arises: 'Does existing construction need to meet evolving code standards?' That's a state-by-state decision. Typically, however, if a hospital adds a new wing, that project will need to meet the new criteria, but the remainder of the facilities will not.

Increasingly demanding seismic standards and broader application of them add another dimension to the responsibilities of engineering professionals. They can minimize their exposure to risk and liability by familiarizing themselves with evolving seismic code standards, developing well-written specifications that account for ground acceleration and other seismic data for a site, working with contractors on a quality assurance program, and specifying only properly certified equipment. ■

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# EGSA 2011 Market "Pulse" Analysis

By John Hoeft, Marketing & Technology Insights

The EGSA Market Trends Committee bi-annually surveys the EGSA membership on how their business is performing and their opinions regarding the power generation market. Participants include a wide range of industry experts from integrators to Fortune 500 OEMs.

The survey data is self-reported, not validated and submitted without any supporting documentation. Nonetheless, individual company information remains confidential. Survey results are neither designed nor intended to include or provide price sensitive or competitive data. Instead, survey results are intended to provide member companies with a "pulse" or sense of the on-site power industry at large and an opportunity to compare their impressions with other EGSA Member companies.

An internet-based survey of 1,250 members (including historical total) including OEMs, distributors, manufacturers' reps, consultants, and engineers was initiated in February, 2011.

Current market changes reflect a market concern with North American Tier IV Interim emissions mandates. Other conclusions from the survey include:

- EGSA Members expect the 2011 power generation market to be better than in 2010. Over 85% of respondents believe 2011 sales will be greater than last year. Reporting companies identified 4% to 10% sales growth most often.
- In analyzing the thirty-one (31) EGSA OEMs (that answered the 2011 sales growth expectation question), 65% expect 11% or greater sales growth when compared to 2010. OEM respondents chose 11% to 20% most often.
- Forty-one (41) respondents reported employee increases in the past six months. Thirty-two of those companies plan on yet additional employees. Twenty-three (23) other companies plan on adding employees after being relatively flat or needing to reduce the labor force in the past six months.
- Seventy-seven percent (77%) of the respondents believe Tier IV Interim will have either "some effect" or a "significant effect" on their business.

The total number of survey respondents was 78. Thirty-five (35) of the respondents are employed by EGSA Member Manufacturer/OEM companies. (Figure 1).

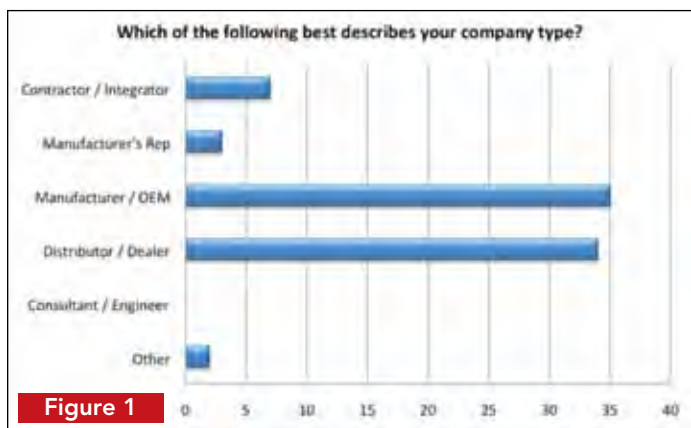


Figure 1



Figure 2

Most individual participants (46%) are in executive management related positions. (Figure 2).

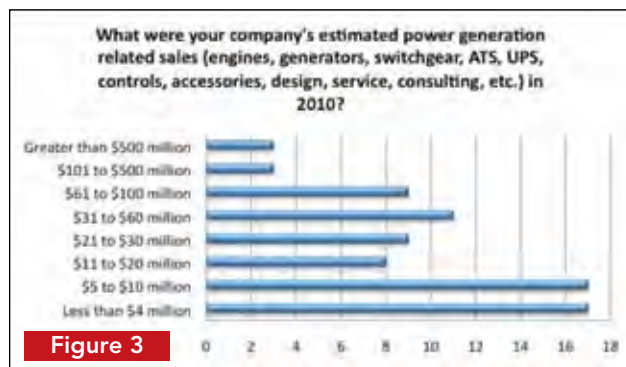


Figure 3

Nearly half of the survey respondents were companies with annual sales less than \$10 million dollars. (Figure 3).

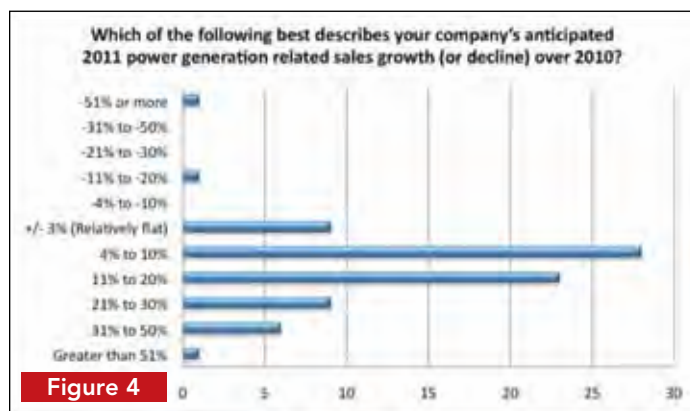
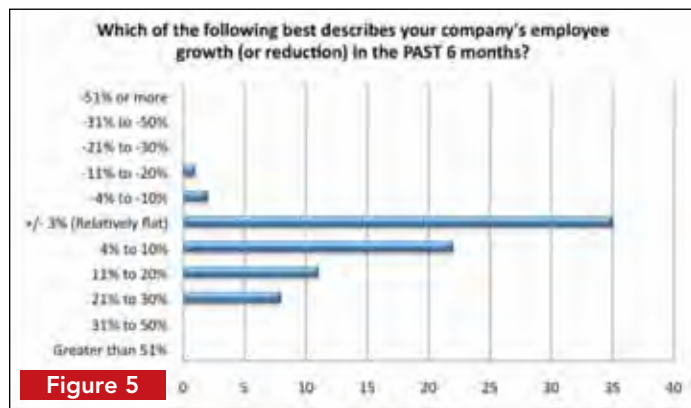
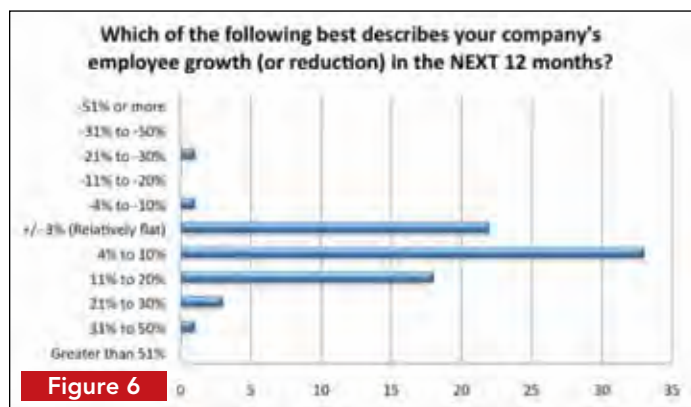


Figure 4

Reporting companies identified 4% to 10% sales growth most often. The respondent reporting greater than 51% decrease in 2011 sales identified 2010 was a record year in sales. (Figure 4).



Overall, thirty-five (35, 44%) EGSA members reported no staff changes in the past six months. From a positive perspective, forty-one (41, 52%) respondents reported employee increases. (Figure 5).



In 2011, fifty-five (55, 69%) respondents plan on increasing the number of employees. (Figure 6).

The following market importance level chart indicates where EGSA members may focus their engineering, sales and marketing efforts. However, please note that these levels are “of the moment” and do not necessarily indicate a company’s ongoing or future marketing strategy. (Figure 7).

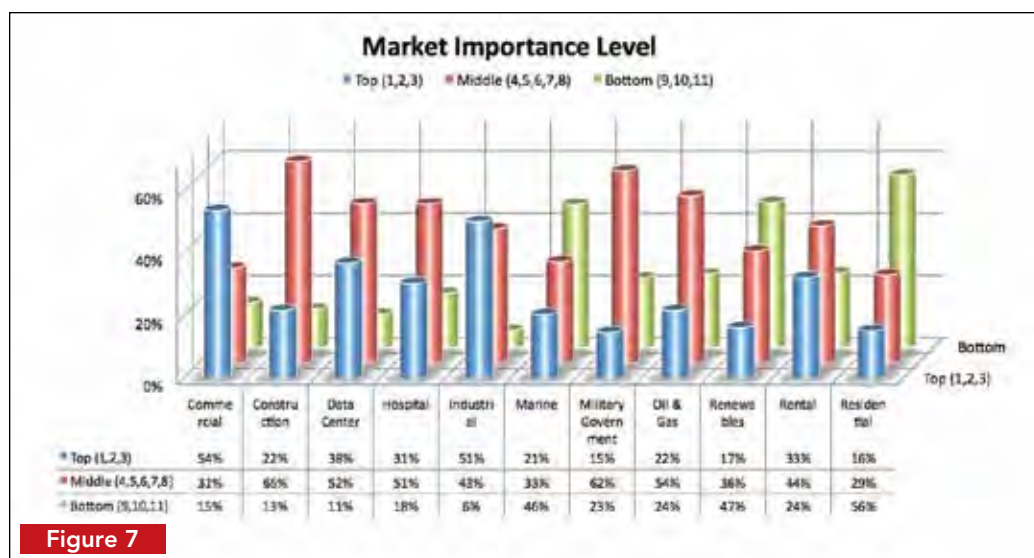


Figure 8	Greater Than 50%	31% to 50%	21% to 30%	11% to 20%	4% to 10%	+/- 3%	-4% to -10%	-11% to -20%	-21% to -30%	-31% to -50%	-51% or worse	N/A	Response Count
Market													
Commercial	1	1	6	7	23	24	3	1	0	0	0	3	69
Construction	0	0	5	6	21	26	5	1	1	0	0	4	69
Data Center	2	0	6	13	23	18	0	1	0	0	0	7	70
Hospital	3	0	4	8	18	28	1	1	0	0	0	8	71
Industrial	1	1	5	18	21	19	4	0	0	0	0	3	72
Marine	0	0	1	5	11	22	3	2	0	1	1	24	70
Military Government	1	1	3	10	22	19	1	1	0	0	0	12	70
Oil & Gas	1	3	3	12	13	18	2	0	1	0	0	17	70
Renewables	1	1	1	9	12	26	0	0	0	0	0	20	70
Rental	2	4	3	13	16	17	3	2	0	0	0	10	70
Residential	0	1	1	6	8	26	2	2	0	0	1	21	68
<b>Question Totals</b>													
answered question													75
skipped question													6

In 2011, sixty-seven (67, 85.9%) of the respondents expect growth. In the table above, respondents identified their opinion in each market category. (Figure 8).

As of January 2011, the diesel gensets emission requirements for engines greater than 130 hp advance to Tier IV Interim levels. However, engine manufacturers have very limited Tier IV Interim production quantities of these engines. Respondents were asked about the effect on their business in the next 12 months. Seventy-seven percent (77%) of the respondents believe Tier IV Interim will have either “some effect” or a “significant effect” on their business. (Figure 9).

Figure 9	Response Percent	Response Count
Answer Options		
Not applicable to my business	6.4%	5
No effect	6.4%	5
Some effect	39.7%	31
Significant effect	37.2%	29
We are not sure how it will affect our business	10.3%	8
answered question		78
skipped question		3

The raw voice of customer survey explanations of the Tier IV Interim effects include the following:

1.	It destroyed the diesel peaking market. It will increase our sales volume for after treatment for projects that can bear the cost.
2.	More expensive, also the physical size of the units is changing which will affect retro fits inside existing buildings.
3.	Those that need engine driven generation will still need it, legally mandated will still need to be purchased, All manufacturers are in a similar situation as far as increased cost and in reality on a major project the overall cost increase should not affect the budget to the point where the project wouldn't go forward.
4.	Will increase the price of product, making those bidding on it higher than those bidding on Tier 3 packages. Expect to see new product issues with this technology being used in a standby application.
5.	New products and processes. Complete learning curve on manufacturing, quoting, delivery, performance
6.	New business opportunities and higher sales \$ per kW
7.	Our ability as an OEM to design and launch our portfolio on time.
8.	Customer acceptance of the significant cost and technology hurdles associated with T4i.
9.	Cost and weight of product
10.	Lack of product to meet Tier 4i. Therefore no sales.
11.	This may require us to change our designs in a way that will accommodate emission control equipment. Not a big deal though.
12.	High cost of rental units and higher rental rates
13.	Added expense for end users will cause distress and put off buying decisions for some. Cost of power projects will go up. Companies may have to redesign equipment to facilitate added filtration and after treatment.
14.	Everyone is still confused and there is no clear message... The folks at the individual states don't even know what to say for our industry. It changes depending on who you talk with.
15.	Compliance
16.	Some will go electric.
17.	Costs Go Way up On Large Installation Double Cost
18.	Training will be required.
19.	Very costly emission controls
20.	Limits the number of products
21.	Expect some effects, but there is still no consensus on our team regarding the Tier4i impact.
22.	Increase complexity of packaging and increase dollars of some transactions
23.	It will raise the price and make projects less doable as well as limit available product for resale.
24.	As standby systems will be allowed to run at Tier 3 levels. This shouldn't have a huge effect but the interest in what is going on will increase consulting. Not a lot of diesel generation running prime in CA - as rental isn't a huge part of our business.
25.	Misinformation and fear will drive T4i to applications that may not need it
26.	Product shifts
27.	It requires all of our focus
28.	This will add significant cost to a generator set. Getting funding for a project may become more difficult in the future. Getting approval once a project is installed may be the next difficult hurdle.
29.	May need to find replacement engines for our current fleet of generators.
30.	More consultative work. More custom engineered projects.
31.	We supply & service emissions control products.
32.	+/- 10% of our business is outside the Standby market
33.	Should open up a number of opportunities for service and replacements
34.	Tier 4 introduces cost which will affect project decisions
35.	ENGINE CONTROLS AND TRAINING NECESSARY TO CALIBRATE THE ENGINES; FIELD ADJUSTMENTS
36.	Tier 4 is causing our company to completely redesign our products.
37.	Additional and redesigned cooling requirements.
38.	All prime power applications will need to be T4i. About 10% of overall business.
39.	We do not supply to that area of the Gen Package.

The Department of Energy (DOE) and Environmental Protection Agency (EPA) are investigating methods to increase US CHP (combined heat & power). Respondents were asked to express their opinion on how this can occur. The raw voice of customer recommendations included the following:

1.	Rebates
2.	Emission relaxation to avoid cost of aftertreatment, etc
3.	Make Interconnect easier rather than utilities have control and having own test requirements
4.	Offer incentives for the increased efficiency that CHP would offer, at least enough to offset some of the costs of equipment to lower the customer payback time and make projects more feasible.
5.	Don't know. Volatility in fuel pricing seems to make CHP a challenge. CHP can be profitable one minute and not the next. This issue probably needs to be addressed.
6.	Add some tax breaks or other incentives to promote R & D. Add incentives to incorporate CHP into buildings. Appoint a CHP "Czar" to create a confident arena for product development in this area. Apply the term "green" to this process as it stimulates ideas and value integration into the overall power planning process for the country. Remove all barriers to the use of approved fuel fired power producing when the result is also the usage of the heat that is the natural result of burning fuel of any type.
7.	Get electric utilities to support.
8.	Incentives for greater levels of CHP efficiency (similar to the EU model) would be a great place to start. Regional electricity costs should also be considered so this can become a nationwide program, not just a regional program. Too many potential CHP plants have fizzled in this country because the local electric company drops their pricing to the entity considering CHP.
9.	Streamlining the interconnect process so that utilities are open to these systems on their grid and won't charge excessive fees putting these systems' viability in jeopardy.
10.	Recognize, measure and reward the offset from reduction of onsite gas/energy consumption by utilizing CHP. This isn't done for carbon footprint nor do the local air boards account for this substantial improvement in carbon reduction. Recognize the total carbon impact cradle to grave of CHP compared to other technologies not just a balance sheet moment in time approach.
11.	Financial subsidies and Performance Contracts
12.	Perhaps reward these customers with extra FLEX credits, or tax incentives, allow for special rapid permit approval
13.	Natural gas fired plants are going to be more popular than coal or heavy fuel fired plants. Import less natural gas and utilize the resources available within the US.
14.	Refocus existing tax and regulatory incentives away from traditional, established markets and products and toward emerging technologies that reduce fossil fuel consumption.
15.	Emissions and reporting
16.	Financial incentives to invest in CHP systems - thru government/utilities.
17.	Credit riders of some kind to help offset cost, Less paper work to satisfy all concerned parties
18.	Standard interconnect standards. DOE policy that supports CHP systems through utilities (today penalties for demand charges may not support CHP as well as could be).
19.	Force utilities to agree to an intertie standard. IEEE 1547 is only a recommended standard. That would open the door to a lot more CHP.
20.	The increased independence on standby power generation in all markets has made getting compliant engines into the field difficult. If the units are classified as peak shaving devices (generally at a large corporation), they have been restricted more with stringent regulations due to the time running and producing that are being scrutinized as the ozone depleting matter. However, if business could get reduced restrictions, this might encourage the purchase of generators for use at a business (non-critical applications) which can be used in conjunction with the local utility to help with the grid demands during peak seasons.
21.	Creating monies and/or awards towards innovation.
22.	Utility interconnect (IEEE 1547) and acceptance.
23.	Letting owners of CHP have a significant incentive to help take pressure off the grid in times of peak demand and the addition of smart meters and controls.

### About the Author

John Hoeft is Principal of Marketing & Technology Insights and a member of the EGSA Market Trends Committee. Contact him at [john@mtinsights.com](mailto:john@mtinsights.com). ■

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# Enercon Engineering: Expanding Global Reach, Keeping Small-Company Atmosphere

Another in Our Series of Profiles of EGSA Member Companies

Photo courtesy JOURNAL STAR/FRED ZWICK

By STEVE TARTER  
Courtesy of the Peoria Journal Star

Enercon Engineering Inc. may be staying under the business radar locally, but the company is flying high around the world.

With more than 37,000 projects in more than 100 countries, Enercon is a leader in power generation, manufacturing engine generator controls, switchgear, packages and enclosures and co-generation units.

"We don't think of ourselves as a big company. We don't assess ourselves as an international organization," said Enercon CEO Larry Tangel.

Enercon employs about 200 people at its East Peoria, IL location. It also has 50 employees at a Barnesville, GA factory, another 20 in Singapore, 10 in Bangladesh and "six floating around the United States," Tangel said.

"We've just opened a facility near Phoenix and we've already got 12 people there. We plan to add more," he said. Enercon has over 293,000 total square feet of Manufacturing Space and 45 acres available for Staging, Storage, and Distribution in the U.S.

Since Ed Tangel, Larry's father, originally from Brooklyn, N.Y., started the company in his Chillicothe, IL garage in 1975, Enercon just keeps growing.

"This company is the perfect example of the free enterprise system at work," said Tangel, recalling that his father formed the company on \$1,700 borrowed from his five children.

An example of what makes the company successful is one of the projects it's working on at present: helping to establish a power plant for the American Samoa Power Authority.

## ENERCON ENGINEERING IS...

...headquartered in East Peoria, Illinois with manufacturing and engineering facilities in Barnesville, GA and Singapore. Enercon designs and manufactures controls, switchgear, SCADA systems, cogeneration packages, natural gas generator sets, pump drives, mobile power modules, enclosures, special assemblies, and provides testing, support and service. For more information, visit [www.enercon-eng.com](http://www.enercon-eng.com).

"We're working with a Caterpillar Inc. dealer in California (providing the generators). The Federal Emergency Management Agency is supporting a power plant for the country that got wiped out by a hurricane. The containers (for the generators) have to be specially made from stainless steel. The plant is designed to be there for five or more years," Tangel said.

Enercon uses generators made by different manufacturers as part of the power generation packages that are shipped all over the world. The customized units assembled here fit into a shipping container or custom enclosure that can be dropped into the middle of the jungle in Peru or at McMurdo Station, Antarctica - where Enercon recently delivered orders.

"We have the engineering skills, both electrical and mechanical, to provide power on-site. We have the service people that can go wherever the units are," Tangel said.

That explains why Enercon was not only able to weather the economic downturn but looks forward to serving a growing group of customers. "Every hospital, prison and wastewater treatment plant should be looking at the value of a co-generation system, and when they are ready to move we can help them," he said.



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**-power in control-**

Whether it's providing a chief power source to the Peruvian Energy Authority for the utility grid, a back-up system as used by OSF St. Francis Medical Center, or a system to provide hot water, cooling, and power for the Four Seasons Hotel on the Hawaiian island of Lanai, Enercon Engineering has the knowledge and ability to handle any power generation job for clients anywhere in the world.

Tangel said there's more involved than just providing hot water or air conditioning for a customer. "The typical payback using a cogeneration system is three to five years. Depending on the application it could be as little as 12 to 18 months," he said.

"Considering that Enercon co-generation packaged systems are designed to run for decades, the investment opportunities for customers are clear," Tangel said.

Another big Enercon customer is landfills. "We've installed units at over 100 landfills around the country that are converting methane gas (that builds up in the landfill) into electricity," Tangel said. Enercon Engineering has provided products and services to more than 20% of the landfills converting landfill gas to electrical energy.

"It's a renewable-energy market that's barely been tapped. There are about 6,000 landfills in this country and only about 400 are doing it (producing electricity from methane gas)," he said.

Enercon Marketing Manager, Ed Ehr Gott said, "landfills are not only able to power on-site operations by converting the gas that builds up, but can sell back additional electricity produced to a local utility. They can also earn green (carbon) credits," he said.

A tour of Enercon's two buildings in East Peoria reveals a wide variety of activities, from the manufacturing of switchgear to the construction of power generation units to the testing of completed units.

Part of the company also is involved with national security. The Terminal High Altitude Area Defense - Prime Power Unit is a special project that involves the development of a transportable missile radar unit designed and manufactured by Enercon in partnership with Lockheed Martin and other contractors. "It's a ship within a ship," said Tangel of the military division, off-limits to all but designated personnel.

Ehr Gott said, "While Enercon continues to grow, it wants to maintain a small-company atmosphere, we're doing the work of a big company with the small-company ideals." ■

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## Gary Kidwell Retires

With a 46-year career in the On-Site Power industry under his belt, Gary Kidwell has embarked on his retirement. For the past 36 years Gary has found a home at ASCO Power Technologies.



Gary began his career in 1962 with Safety Switchgear. In 1967, Gary headed up his own company, Switchgear Power Systems. From 1971 to 1974 he worked with the King Knight Company. In 1974 he took a position with Delta Switchboard. 1986 brought Gary to ASCO Power Technologies where he was the Western Region Sales Manager.

Gary's involvement with EGSA has been extensive since first joining 36 years ago, contributing both his time and energy in support of our Association. He has chaired both the Education and Convention Committees, sat on the Executive Board for two terms and held the office of President in both 2001 and 2007. In 2004 Gary was the recipient of the Leroy H. Carpenter Award for his for long and outstanding service to the Association.

What does retirement hold for Gary? When he is not fishing, hunting or playing golf you'll find him hitting the road on his Harley. We all wish you the very best. Happy trails to you Gary! ■

## NFMT Plans EGSA Power Source Pavilion for 2012

**Electrical Generating Systems Association (EGSA) and Trade Press Media Group Partnership Expands Educational Opportunities and Exhibit Hall**

Electrical Generating Systems Association (EGSA) and the Trade Press Media Group announced they are uniting to provide the latest information on the advances and effectiveness of onsite power at NFMT 2012. This event will be held March 13-15, 2012, at the Baltimore Convention Center.

As part of the partnership, a new educational track will be developed to provide facility professionals with key onsite power strategies including peak shaving, cogeneration, uninterruptible power supply, and alternative power sources such as wind, solar, and fuel cells.

"We are excited about this new partnership with EGSA, as the new Power Source Pavilion will add significant value to the buyers and sellers of on-site power solutions at NFMT 2012," said Todd Kotlarek, director of live events for Trade Press Media Group. "As the world's largest organization exclusively dedicated to on-site power generation, EGSA's contribution to the NFMT exhibit hall will empower our attendees with knowledge and connections that are otherwise hard to come by."

"We are always looking for new opportunities to educate and promote the value and importance of on-site power generation," added John Kelly, Jr., of EGSA. "By partnering with Trade Press Media Group, we're able to leverage the NFMT brand and introduce the Power Source Pavilion and expand awareness of on-site power issues and strategies to a built-in audience at the NFMT Show." For more information, visit [www.EGSA.org](http://www.EGSA.org). ■

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MF=Manufacturer DD=Distributor/Dealer CI=Contractor/Integrator MR=Manufacturers Rep  
EM=Energy Management Co. AA=Trade Publication AB=Trade Association AC=Engineer  
AD=End-User AE=Service AG=Educational Institution AR=Retiree AF=Student



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# Application for Membership

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E-Mail: [e-mail@EGSA.org](mailto:e-mail@EGSA.org) • World Wide Web: [www.EGSA.org](http://www.EGSA.org)

*Under the leadership of its Board of Directors and operating through its various committees and staff, EGSA strives to educate, provide networking opportunities and share relevant knowledge and trends with industry professionals including manufacturers, distributor/dealers, engineers, manufacturer representatives, contractor/integrators and others serving On-Site Power consumers.*

### 1. Contact Information

*Please type or print all information in upper and lower case (NOT ALL CAPS!)*

Company \_\_\_\_\_  
Address \_\_\_\_\_  
City \_\_\_\_\_ State/Province \_\_\_\_\_  
Zip/Postal Code \_\_\_\_\_ Country \_\_\_\_\_  
Phone \_\_\_\_\_ FAX \_\_\_\_\_  
Official Representative \_\_\_\_\_ Title \_\_\_\_\_  
Representative's E-Mail \_\_\_\_\_ Company's Web Address \_\_\_\_\_  
How did you hear about EGSA? ☐ Web site ☐ Powerline magazine ☐ Colleague ☐ POWER-GEN ☐ Other \_\_\_\_\_  
Why are you joining EGSA? ☐ Certification Program ☐ CEU Program ☐ Power Schools ☐ Buying Guide Listing ☐ Other \_\_\_\_\_

### 2. Member Classification

*Read the Membership classifications below and check the box that describes your firm's classification.*

#### I. FULL MEMBERSHIP

- ☐ MF **Manufacturer Membership**  
Any individual, sole proprietor, partnership or corporation seeking membership must apply for a Full Membership as a manufacturer if they meet one or more of the following criteria:
1. They manufacture prime movers for power generation.
  2. They manufacture generators or other power conversion devices producing electricity.
  3. They manufacture switchgear or electrical control devices.
  4. They manufacture or assemble generator sets, UPS systems, solar power, hydropower, geothermal, or any other power production or conversion system including related components or accessories for national or regional distribution.
  5. They are a wholly owned subsidiary of a firm that qualifies under rules one through four.
- ☐ DD **Distributor/Dealer Membership**  
Any individual, sole proprietor, partnership or corporation actively engaged as a distributor or dealer for products listed under Manufacturer Membership may apply for Full Membership as a Distributor/Dealer. If an organization qualifies under Manufacturer Membership, it is not qualified under this section.
- ☐ CI **Contractor/Integrator Membership**  
Any individual, sole proprietor, partnership or corporation actively engaged as a Contractor or Equipment Integrator of products listed under Manufacturer Membership, not bound by brand, geographic territory or contractually obligated as a Distributor/Dealer of a specific product. These firms typically purchase products from a Distributor/Dealer, Manufacturer or Retailer, adding value through installation, product knowledge, relationships, unique services, etc., and then re-sell the resulting product to an end-user.
- ☐ MR **Manufacturer's Representative Membership**  
Any individual, sole proprietor, partnership or corporation actively engaged in the representation of products listed under Manufacturer Membership may apply for Full Membership as a Manufacturer's Representative. If an organization qualifies under Manufacturer Membership, it is not qualified under this section.
- ☐ EM **Energy Management Company Membership**  
Any individual, sole proprietor, partnership or corporation engaged in energy management, including Energy Service Companies (ESCOs), Independent Power Producers (IPPs), Integrators, Aggregators, and other similar enterprises may apply for Full Membership as an Energy Management Company.
- ☐ **Associate Full Membership (mark appropriate category at right)**  
Any individual, sole proprietor, academic institution, student, partnership or corporation meeting the requirements of Associate Regular Membership may apply for Full Membership at their option to enjoy the privileges of Full Membership, including the rights to vote and to serve on EGSA's Board of Directors. Initiation fees and annual dues will be assessed at the existing non-manufacturer Full Member rates.

#### II. ASSOCIATE REGULAR MEMBERSHIP

- ☐ AA **Trade Publication Membership**  
Any trade publication dealing with the electrical generating systems industry or its suppliers may apply for Associate Membership—Trade Publications.
- ☐ AB **Trade Association Membership**  
Any trade association made up of individual or company members sharing a common interest in the electrical generating systems industry may apply for Associate Membership—Allied Associations.
- ☐ AC **Engineer Membership**  
Any consulting or specifying engineer may apply for Associate Membership—Engineer. Membership may either be held in the employer's name or individual's name under this classification. Individuals whose employer qualify as a Full Member, as described in the Full Membership section, do not qualify for this category.
- ☐ AD **End-User Membership**  
Any individual employee of a company who owns or operates electrical generating equipment and/or related switchgear or components, whose responsibility to his employer includes planning, design, installation, supervision, or service of such equipment may apply for Associate Membership—User. Membership may either be held in the employer's name or individual's name under this classification. Individuals whose employer qualify as a Full Member, as described in the Full Membership section, do not qualify for this category.
- ☐ AE **Service Membership**  
Any individual, organization or academic institution that offers services such as research, testing or repair to the electrical generating systems industry may apply for Associate Membership—Services. Membership may either be held in the individual's name or the organization's name under this classification. Individual companies whose employer or parent organization qualifies as a Full Member, as described in the Full Membership section, do not qualify for this category.
- ☐ AG **Educational Institution Membership**  
Any postsecondary vocational-technical school or college offering on-site power generation-related instruction may apply for Associate Membership—Education Institution.
- ☐ AR **Retiree Membership**  
Any individual who retires from a member company may apply for Associate Membership—Retired. This classification does not apply to any individual who is employed more than 20 hours per week.
- ☐ AF **Student Membership**  
Any individual currently enrolled at an academic institution may apply for Associate Membership—Student.

## Application for Membership – page 2

### Dues Schedule (Use for Section 3)

	Annual Dues	Initiation Fee	TOTAL
Manufacturer.....	\$825	\$200	\$1025
Distributor/Dealer.....	\$285	\$100	\$385
Contractor/Integrator.....	\$285	\$100	\$385
Manufacturer's Representative.....	\$285	\$100	\$385
Full Associate Member.....	\$285	\$100	\$385
Energy Management Company.....	\$200	\$100	\$300
Regular Associate Member.....	\$200	\$100	\$300
Retiree Member.....	Complimentary	\$0	\$0
Student Member.....	Complimentary	\$0	\$0

**NOTE:** A FULL 12-MONTH DUES PAYMENT MUST BE RECEIVED WITH THIS APPLICATION. The Association's Membership Year is January 1 through December 31. Dues payments that extend beyond the first Membership Year will be applied to the second year's dues.

### FULL PAYMENT MUST BE RECEIVED WITH APPLICATION.

### 3. Membership Dues (Please fill in the appropriate TOTAL amount from the above dues schedule.)

Membership Dues \$ \_\_\_\_\_  
Membership Plaque (optional)\*\* \$ 49.95\*\*  
On-Site Power Reference Book (optional)\*\* \$ 125.00\*\*  
**Florida Residents:** Add 6% Sales Tax to \*\* items \$ \_\_\_\_\_  
Continental US Residents add \$5 shipping/handling to\*\*items. \$ \_\_\_\_\_  
Non Continental US Residents should call EGSA  
Headquarters for shipping charges for \*\*items. **TOTAL** \$ \_\_\_\_\_

### 4. Payment Method (Payable in US\$ drawn on U.S. bank, U.S. Money Order, or American Express)

☐ Check # \_\_\_\_\_ Amount Due \$ \_\_\_\_\_  
☐ Money Order  
☐ Mastercard ☐ Visa ☐ American Express  
Card # \_\_\_\_\_ Exp. Date \_\_\_\_\_  
Signature: \_\_\_\_\_  
Print Name: \_\_\_\_\_

### 5. Products/Services Please describe the nature of your business (50 words or less, NOT ALL CAPS). If you are a Manufacturer's Representative or Distributor/Dealer, please indicate which manufacturers you represent and/or distribute for; if you are a student, please provide the name and location of your school, your major and your anticipated graduation date:

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Do you buy AND sell equipment? ☐ Yes ☐ No

Do you manufacture packaged equipment? ☐ Yes ☐ No

#### Available Codes:

01 ---Batteries/Battery Chargers	09 ---Generator Laminations	19 ---Silencers/Exhaust Systems/Noise Abatement
02 ---Control/Annunciator Systems	10 ---Generator Sets	20 ---Solenoids
29 ---Education	11 ---Generators/Alternators	21 ---Switchgear and Transfer Switches (Automatic or Manual), Bypass Isolation Switches, and/or Switchgear Panels
30 ---Emission Control Equipment	12 ---Governors	22 ---Trailers, Generator Set
04 ---Enclosures, Generator Set	13 ---Heat Recovery Systems	23 ---Transformers
05 ---Engines, Diesel or Gas	14 ---Instruments and controls, including meters, gauges, relays, contactors, or switches	24 ---Uninterruptible Power Supplies
06 ---Engines, Gas Turbine	15 ---Load Banks	25 ---Vibration Isolators
07 ---Engine Starters/Starting Aids	16 ---Motor Generator Sets	26 ---Voltage Regulators
08 ---Filters, Lube Oil, Fuel or Air	17 ---Radiator/Heat Exchangers	27 ---Wiring Devices or Receptacles
28 ---Fuel Cells	18 ---Relays, Protective or Synchronizing	
03 ---Fuel Tanks and Fuel Storage Systems		

#### Enter codes here:

Products sold: \_\_\_\_\_

Products rented: \_\_\_\_\_

Products serviced: \_\_\_\_\_

### 6. Sponsor(s): A "Sponsor" is an EGSA Member who interested you in filling out this application. It is not mandatory that you have a sponsor for the Board to act favorably on this application; however, if a Member recommended that you consider membership, we request that individual's name and company name for our records.

Sponsor Name \_\_\_\_\_ Company Name \_\_\_\_\_

### 7. Official Representative's Authorization

Signature \_\_\_\_\_ Date \_\_\_\_\_

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## Sales/Marketing/Project Management Pro Available

After a long career working for several Companies active in the on-site power industry, I retired in April 2009 thinking that my business days were over. However, due to changes not anticipated, I now want to re-enter the business community, and am looking for an opportunity to put my 48 years of experience back to work. This can be as an employee on the Company payroll, as a business consultant, or as a contract employee off the payroll. My salary needs are minimal to supplement other retirement income, and there is no need for the traditional payroll taxes or benefits, so I may be able to fill a need at a relatively low cost. My background is in Sales, Marketing and Business Administration, plus the development and direction of multi-level distribution and independent sales representation both within the US and overseas. Positions have been held with Cummins Engine, Waukesha Dresser, Industrial Power Systems, and several engine/power systems fabricators and distributorships. Resume available on request. Contact me directly at [yourmickeys@comcast.net](mailto:yourmickeys@comcast.net) or at 904.891.6400. -- Jerry Steinberg

## Generator Service Technicians

CJ's Power Systems in Florida, a distributor for MTU Onsite Energy is currently seeking qualified technicians throughout the state. Job includes: performing planned maintenance, diagnostics, repairs, and startups of generators. Knowledgeable, computer skills, clean driving record a must. Excellent pay, medical, and other benefits. Email resumes: [jobs@cjspower.com](mailto:jobs@cjspower.com); fax to 352-732-0606 **EGSA Certified Technicians Preferred.**

## Sales

CJ's Sales & Service has been in the industry for 40 years and is a distributor for MTU Onsite Energy. Looking for a highly motivated, knowledgeable, and experienced salesman for equipment, service, and rentals. Clean MVR, drug test necessary. Competitive pay, commission, vacation, health, dental. Email resumes: [jobs@cjspower.com](mailto:jobs@cjspower.com) fax: 352-732-0606

## Generator Sales

Central Power Systems & Services, Inc. has immediate opening for Generator Rental Manager based out of Kansas City, plus Generator Sales positions in Wichita, KS and Springfield, MO. We offer a strong base wage, incentive program and a full benefit package (including company car, gas allowance, expense card, FREE MEDICAL insurance, FREE LIFE insurance, paid vacation, profit sharing and 401(k), etc.). Fax a cover letter, salary requirements and your resume to 816-781-4518 or e-mail it to [jobs@cpower.com](mailto:jobs@cpower.com) EOE

## Experienced Power Generation Technicians Wanted!

Penn Power Systems, leaders in the power generation business, is actively seeking experienced field service technicians for open positions in our upstate New York and Pennsylvania locations. Candidates should be familiar with natural gas and diesel prime movers with industry experience and knowledge of systems and controls. Penn Power Systems and its divisions offer industry competitive salaries, medical, 401(k), and vacation benefits. All interested parties should send resumes and work related history to [jobs@pennpowersystems.com](mailto:jobs@pennpowersystems.com) or call 1-877-736-4473. **We Proudly Employ EGSA Certified Generator Technicians.** EOE M/F/D/V

## EGSA Job Bank Guidelines

EGSA will advertise (free of charge) EGSA Member company job openings in the Job Bank. Free use of the Job Bank is strictly limited to companies advertising for positions available within their own firms. Companies who are not members of EGSA and third-party employment service firms who service our industry may utilize the Job Bank for a \$300 fee. Blind box ads using the EGSA Job Bank address are available upon request; company logos may be included for an additional fee. EGSA reserves the right to refuse any advertisement it deems inappropriate to the publication. Please send your classified ad (limited to about 50 words) to: EGSA Job Bank, 1650 S. Dixie Hwy, Suite 400, Boca Raton, FL 33432. Or, send it via e-mail it to: [J.Kellough@EGSA.org](mailto:J.Kellough@EGSA.org)

## Generator Technician

KELLY GENERATOR & EQUIPMENT, INC., the mid-Atlantic leader in standby electrical generators is seeking experienced Generator Technicians. We are a full service distributor of emergency standby and prime power located in the mid-Atlantic region that covers Delaware, Maryland, Northern Virginia, West Virginia and Washington, DC.

- SALES, SERVICE, PARTS, RENTALS & TRAINING
- We offer factory training on the lines we represent as well as "in house" training
- Medical, dental, vision, 401(k), profit sharing, short and long term disability, paid holidays, annual leave, overtime and paid "On Call"

Must have a High School Diploma (Vo-tech or GED), 3 - 5 years experience servicing industrial generator sets and associated equipment. Must be able to service, repair and troubleshoot the engine, as well as the alternator end and controls of the equipment. E-mail resumes to [dkelly@kge.com](mailto:dkelly@kge.com) **EGSA Certified Technicians Preferred.**

## Rental Salesman for CT and NY

ElecComm Power Services ('EPS') is a company that specializes in the rental and service of emergency power. EPS is actively seeking a rental salesman for CT and NY areas -Create Sales/Marketing budget -Contribute to developing a long term business plan -Develop new business opportunities and manage existing accounts -Deliver sales presentations -Quote prices, contract terms, and help coordinate projects. Contact [bkerins@eleccommps.com](mailto:bkerins@eleccommps.com)

## Generator Field Technician

PM Technologies, LLC has several immediate openings for Generator Technicians. We are located and operate in Michigan, Ohio and Northern Indiana. High School diploma or equivalent a must. Military experience a plus. Must be able to troubleshoot and repair the engine (diesel and gaseous) as well as the generator end. Customer interaction will be required on a daily basis. We need highly motivated, self sufficient people to assist in growing our expansion efforts at new branch locations. Benefits include company vehicle, 401k, health, dental and vision coverage's as well as paid bonuses for new account procurement. Fax resumes to 248.374.6408 or email to [dpopp@pmtech.org](mailto:dpopp@pmtech.org) **EGSA Certified Technicians Preferred.**

## Generator Field Technicians

TAW® is searching for experienced Generator Field Technicians in Orlando & Tampa, FL. Duties include: inspections, repairs, services and start-up of generators & ATS. Troubleshoot generators & automatic transfer switches. Diesel engine experience desired. E-mail resume to [ellen.donegan@tawinc.com](mailto:ellen.donegan@tawinc.com). Fax (813) 217-8076. AA/EOE. DFWP. [www.tawinc.com](http://www.tawinc.com) **EGSA Certified Technicians Preferred.**

## Industrial Switchgear Product Specialists

TAW® is looking for Ind. Switchgear Product Specialists for our Power & Distribution & Switchgear Div at our Custom Equipment facility in Riverview, FL. Will increase sales of switchgear & power equipment centers for low & medium voltage product lines with new & existing accounts. Will target customers for utilities; OEM's & municipalities to drive volume. Prior exp either selling, or application engineering of, industrial switchgear systems. Prior experience working for a manufacture, or re-seller of industrial switchgear - medium or low voltage in either an engineering; applications; or sales role. TAW® offers a competitive salary and commission as well as benefits. Candidates can be based, & will cover the following markets: Houston, Atlanta, Charlotte & Birmingham. Candidates can e-mail resumes to [ellen.donegan@tawinc.com](mailto:ellen.donegan@tawinc.com) or fax resumes to (813) 217-8076; AA/EOE. DFWP. [www.tawinc.com](http://www.tawinc.com)

## Emergency Generator Sales

We are growing! Genset Services, Inc. the top tier industrial distributor for Generac generators in South Florida has an opening for an outside salesperson. Candidates should have a minimum of 6yrs sales experience in emergency power equipment or in a similar or related field. We offer a competitive compensation package that includes a base salary plus commissions, car allowance, health insurance, vacation and investment plan. Please forward your resume with cover letter and salary requirements to [matt@gensetservices.com](mailto:matt@gensetservices.com)

## Generator Service Technicians

We are growing! Genset Services, Inc. is seeking qualified generator technicians for our Central and South Florida branches. Working knowledge of Diesel and Gaseous engine driven generator sets is required including service/maintenance, troubleshooting/repair of AC and DC electrical and control systems as well as strong computer skills. Ideal candidate will have neat appearance and clean driving record. We offer a competitive compensation package including company vehicle, health insurance, vacation and an investment plan. Please forward your resume with cover letter and salary requirements to [keith@gensetservices.com](mailto:keith@gensetservices.com) **EGSA Certified Technicians Preferred.**

## Generator Technician

Full time experiences generator field technician needed for Central Florida/Lakeland area. Applicant must have diesel engine experience and transer switch knowledge, preferably EGSA certified. Job includes performing preventive maintenance, repairs, and startups of generators. Clean driving record a must and applicant must pass drug screening. Competitive wages and benefits. Email resumes to [skapparos@suregen.com](mailto:skapparos@suregen.com) **EGSA Certified Technicians Preferred.**

## EGSA JOB BANK

### Generator Field Service Tech

Kentech Power has immediate openings for a Generator Field Service Tech located and operated in Houston and San Antonio Texas. Kentech is seeking an experienced generator technician who is capable of troubleshooting, repair and maintenance of diesel and gaseous generator sets and associated switch gear. Candidate must have 3 to 5 years experience, a team player, clean license and background. Benefits: health, dental, paid vacation/holidays. Submit resume: [jobs@kentechpower.com](mailto:jobs@kentechpower.com) EGSA Certified Technicians Preferred.

### Power Generation Equipment Sales Person

Kentech Power is looking for a full-time Power Generation Equipment Sales Person. Potential candidates should possess previous sales experience, preferably in the Power Generation Equipment Field. They must be highly motivated and customer focused. They must be willing to work in the San Antonio / Austin area. Interested candidates should send their resume through our website at [www.kentechpower.com](http://www.kentechpower.com) or by fax to 210-946-2473.

### Generator Sales

Cooper Power Systems, a New Jersey, New York based Kohler Generator Distributor for more than 40 years, has immediate openings for qualified Salespeople at our Long Island, NY location. We offer a competitive compensation package, health benefit plan, vacation. Please send your resume and salary requirements to [greg.seres@cooper-electric.com](mailto:greg.seres@cooper-electric.com)

### Generator Field Technician-Experienced

Full-time experienced generator field technician opening in Ft. Lauderdale, FL. Requires advanced knowledge of standby generator systems with minimum 5 years experience. Working knowledge of 12 & 24 VDC controls. Company offers a full comprehensive benefits package. Competitive wage, company vehicle, laptop and cell phone for qualified candidates. Send resumes to [careers@acfpower.com](mailto:careers@acfpower.com) or fax to HR at 813-621-6980. EGSA Certified Technicians Preferred.

### Generator Technicians

Due to our continued growth, Central Power Systems & Services, Inc. has immediate openings for Generator Technicians at several of our Missouri, Kansas and Oklahoma facilities. We offer a strong base wage and a full benefit package (including FREE MEDICAL & LIFE insurance) and PAID RELOCATION depending on skill set. Fax a cover letter, salary requirements and your resume to 816-781-4518 or e-mail it to [jobs@cpower.com](mailto:jobs@cpower.com) EOE EGSA Certified Technicians Preferred.

### Generator Set Sales/Service

Experienced sales/service engineer needed by southern California company to sell engine generator sets. Please respond to [J.Kellough@EGSA.org](mailto:J.Kellough@EGSA.org) (Reference PLND06JB-1).

### CONSTRUCTION

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### SALES MANAGER Job ID: 2011-1039

Sell engine parts and service through effective planning and mgt and coordinates with Parts and Service depts to price and schedule work. A Bach's deg (technical or business) or equiv work exp in sales mgt and 3+ yrs' sales mgt exp with strong exp in employee development required.

### RENTAL MANAGER Job ID: 2010-1035

Provides key resources (people, time and leadership) to maximize market share and successfully develops growth initiatives and manages the Rental operation incl mgt of the rental fleet and staffing and developing people. Must possess a BA/BS in an Electrical, Mechanical, or Business related major or equiv industry related working exp and 5+ yrs' exp in a Power Industry Sales or Management position.

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**"The Power Generation Specialists"**

## Wärtsilä Receives Major Power Plant Order from Turkey

Wärtsilä will supply the world's largest gas engines for a new Turkish power plant with a combined output of 135 MW. When the project is completed, Wärtsilä's generating capacity in Turkey will exceed 3 GW. Approximately 85 per cent of these plants will be running on natural gas.

Wärtsilä, a global supplier of flexible power plants and services to the global power generation market, has received an order to supply engines for a new power plant in Turkey. The scope of supply covers seven Wärtsilä 18V50SG natural gas fuelled engines with a combined output of 135 MW of electricity. The order has been placed by Odas Elektrik Uretim, an independent power producer (IPP) for its new plant at Urfa in south eastern Turkey. The plant is scheduled for completion in the fall 2011, and will supply power to the national grid.

The Wärtsilä 18V50SG spark-ignited gas engine is the largest gas powered combustion engine generating set in the world. It reaches an exceptionally high power plant net efficiency rating of more than 50 per cent in combined cycle mode. The engine was introduced in autumn 2010. The very first installation also took place in Turkey where there is a need to rapidly increase efficient generation capacity.

"Wärtsilä's solution was the best under the ambient conditions of the region," comments Mr Burak Altay, General Manager, Odas Elektrik Uretim. "The short delivery time, high electrical efficiency, technical support and the design capability convinced us to place the order with Wärtsilä."

"Wärtsilä has a strong presence in Turkey, and this latest order reinforces our position in this market," commented Ufuk Berk, Managing Director, Wärtsilä Turkey. "When this project is completed, our generating capacity in Turkey will exceed 3 GW. Approximately 85 per cent of these plants will be running on natural gas. The success of the Wärtsilä 50SG engine emphasises the strength of our technology in the field of gas and dual-fuel engines. It is an exceptionally efficient and flexible power generator, and it significantly contributes to the environmental sustainability of modern power systems."

Wärtsilä has been present in Turkey since 1994 when the first units were delivered. Today more than 300 Wärtsilä engines are installed. Wärtsilä currently provides sales and service to its customers from two locations in Turkey and employs more than 120 people. A third workshop is scheduled to be opened later this year, after which the total number of Wärtsilä employees in Turkey will increase to around 160. ■



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### Cummins Power Generation Launches Website on Climate-Change Initiatives

Cummins Power Generation has launched a new website dedicated to the company's broad range of climate-change initiatives.

The website brings together news and information from across Cummins Power Generation about its varied products, services, projects, development initiatives and employee activi-

ties that have a bearing on climate change and reducing carbon footprints.

Jaime Teixeira de Queiroz, Executive Director for Commercial Project Business, noted that the rationale for the site starts with one element of the corporate mission, which demands that everything the company does lead to a cleaner, healthier, safer environment. "That commitment drives our work as a world-wide leader in emissions technology, which provides Cummins with a significant advantage," he said. "It also is behind ongoing efforts to reduce the environmental impact of our facilities, and engage our employees in ways they can make a difference."

Tony Satterthwaite, President of Cummins Power Generation, said, "We are committed to being fact-based, open and engaged with our customers, suppliers, employees and communities about the issue of climate change. For example, we are collaborating with customers on reducing fuel and lube oil consumption and on developing logistics solutions that reduce transportation and materials costs. The new website is a great way to collect and disseminate information on all our work in this crucial area."

For information, visit [www.cumminspowerdocs.com/climate/climate-landing.html](http://www.cumminspowerdocs.com/climate/climate-landing.html) ■

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